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RESEARCH NEEDS IN VOCATIONAL-TECHNICAL EDUCATION.

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DESCRIPTORS- *RESEARCH NEEDS, *VOCATIONAL EDUCATION, TECHNICAL EDUCATION, STATE SURVEYS, *ADMINISTRATOR ATTITUDES, VOCATIONAL DIRECTORS, QUESTIONNAIRES, WISCONSIN,

THE OBJECTIVE OF THIS STUDY WAS TO IDENTIFY A STARTING POINT FOR RESEARCH EFFORTS IN THE STATE'S VOCATIONAL AND TECHNICAL EDUCATION SYSTEM. THE DIRECTORS OF THE 64 SCHOOLS OFFERING VOCATIONAL AND TECHNICAL PROGRAMS IN THE STATE RANKED, ACCORDING TO RESEARCH IMPORTANCE, THE COMPONENTS IN 14 CATEGORIES RELATING TO THE BROAD AREAS OF OCCUPATIONAL OPPORTUNITIES, HUMAN RESOURCES, AND EDUCATIONAL RESOURCES. ALTHOUGH IN GENERAL, AGREEMENT WAS LOW, THE FOLLOWING COMPONENTS RECEIVED A PLURALITY OF FIRST PLACE RANKINGS OF RESEARCH IMPORTANCE--(1) OCCUPATIONS FOR WHICH VOCATIONAL AND TECHNICAL EDUCATION PROGRAMS SHOULD BE AVAILABLE, (2) COMPETENCIES NEEDED FOR SUCCESSFUL ENTRY, PERSISTENCE, AND ADVANCEMENT, (3) FACTORS AFFECTING MOTIVATION OF THE SOCIOECONOMICALLY HANDICAPPED TO PURSUE TRAINING FOR GAINFUL EMPLOYMENT AND TO SEEK EMPLOYMENT, (4) IMPROVEMENT OF COMMUNITY ATTITUDES TOWARD VOCATIONAL EDUCATION AS PREPARATION FOR EMPLOYMENT, (5) FACTORS WHICH AFFECT DECISIONS TO MOVE AND SEEK EMPLOYMENT IN NEW SITUATIONS, (6) ASSISTING STUDENTS TO COPE EFFECTIVELY WITH CAREER CHANGES THROUGHOUT LIFE, (7) IDENTIFYING PERSONS WHO CAN BENEFIT FROM VOCATIONAL EDUCATION, AND TYPES OF TRAINING THAT WOULD BE MOST BENEFICIAL, (8) BASIC SKILLS WHICH ARE TRANSFERABLE FROM ONE OCCUPATION TO ANOTHER OR WHICH FUNCTION IN CLUSTERS, (9) CURRICULUMS FOR NEW AND EMERGING OCCUPATIONAL FIELDS, (10) OPTIMUM MIX OF THEORY AND PRACTICE, (11) SOURCES OF PERSONNEL APPROPRIATE TO SPECIFIC STAFFING NEEDS, (12) EFFECTIVE METHODS OF ORGANIZING, ADMINISTERING, AND SUPERVISING PROGRAMS OF VOCATIONAL EDUCATION, (13) EFFECTIVE VOCATIONAL GUIDANCE AND COUNSELING PROCEDURES, AND (14) FACILITIES AND EQUIPMENT NECESSARY TO PREPARE PERSONS TO ENTER AND ADVANCE IN VARIOUS OCCUPATIONS. THE INSTRUMENT IS INCLUDED. (EM)

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RESEARCH NEEDS IN VOCATIONAL - TECHNICAL EDUCATION

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RESEARCH NEEDS

in

Vocational-Technical Education

by

E. Wayne Courtney, Ph.D.
The Graduate School

in cooperation with the
Wisconsin Schools of Vocational, Technical,
and Adult Education
State Board of Vocational, Technical, and
Adult Education
C. L. Grieber, Director

Stout State University
Menomonie, Wisconsin

April, 1966

Preface

Research problems are both numerous and varied to the extent that coordination and direction is difficult and cumbersome. The field of education is particularly cumbersome because of the multiplicity of factors to be considered in any research endeavor. To give direction to the research effort in education requires the identification of factors in need of study. Thus, the present work approaches this problem so that some coordination pattern may be suggested.

The study utilizes statistical and graphical illustration in emphasizing the outcomes. The use of these media for directing graduate students as well as professional workers in the schools of vocational, technical, and adult education within the state of Wisconsin should aid both university and state department coordinators in coping with the basic issues of problem selection.

The study could not have been possible without the cooperation of the Directors of Vocational, Technical, and Adult Schools within the state. Likewise, the Research Committee of the Director's Association should be credited for their encouragement toward the development of the study.

The typing and editing of the manuscript was done by Mrs. Linda Jacobs, Miss Judy Kuehl, Miss Virginia Suhrke, and Mr. William Heineke. They should be duly credited for their efforts.

E. W. C.

Menomonie, Wisconsin
April, 1966

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INTRODUCTION

In recent times, there has been increased activity in educational research work in the United States. Many have acclaimed this activity as being a part of the necessary elements involved with up-grading the quality of education; others have observed it to be due in great part to the present financially wealthy status of government programs. Whatever the reason or reasons, we are currently engaged in a great and varied educational research movement which extends itself from kindergarten to adult education.

The needs of the enormous energies exerted toward research in modern times are extensive. Perhaps the greatest need presently is for more qualified research workers to be trained to guide such energies. Newly created Federal legislation has caused this imperative need to be a crucial one in our times.

Likewise, the influx of educational research interpreters, or "middlemen"[1] is deemed to be an essential element of the new emphasis if the program is to be successfully launched. Again, the need for trained workers is great and critical.

To many, our present dilema is similar to the circumstance which arose between 1906-14 when the County Agent System was organized to aid farmers. The County Agent System was one which essentially reviewed and interpreted research developments in agriculture for farmers. With elaborate financial backing from the Federal government, much energy was expended both for the training of these "demonstrators of good farming practices" as well as toward the implementation of farming itself. As a consequence of such efforts and supports, our food production system is the most efficient one on the face of the globe. If the educational research endeavor is half as fruitful, our future generations of children should be richly rewarded as a result of our present engagement.

Planning is perhaps the most essential factor for any type of activity, and educational research is no exception. In the past, there has been too much of the uncoordinated, "post-mortem" kinds of efforts at both the planning and the application stages for research work in education. Thus, we have arranged for very little combined and organized performance in solving the many complex problems which face educators. As a result, very few of these many complex problems have been adequately approached.

---

[1]E. Wayne Courtney. Applied Research In Education. Totowa, New Jersey: Littlefield, Adams, and Company, 1965, pp. 213-219.

Federal Legislation

Since the early part of the century, the Federal Government has been engaged in various programs which have supplemented local and state activities in education. These programs have been most influential in the promotion of vocational and technical education. From the Smith-Hughes Act of 1917, which provided appropriations to the states for agricultural education, trade, home economics, and industrial education, and the training of teachers of these subjects, to the most recent Elementary and Secondary School Act of 1965, which provides for the establishment of Regional Education Research Laboratories (RERL), this engagement has been noted. Likewise, some of the more recent legislation has provided movies for the training of educational research workers.

The Vocational Education Act of 1946 (the George-Barden Act) which provided funds for administration, vocational guidance, and training in practical nurse and other health occupations, has likewise increased financial support for education programs. Still further support has been given to training in the technologies through the addition of Title III to the 1946 Act.

These and other programs have greatly subsidized and implemented training for vocational and technical education.

Wisconsin's Structure

The primary purpose of the Wisconsin Schools of Vocational, Technical, and Adult Education is to extend educational opportunities and services to both youth and adults. The wide range of educational programs provided by these schools attempts to meet the needs of people through academic, technical, vocational, and avocational offerings. Counseling, guidance, and testing services are extended by most schools with housing facilities being arranged by many. Area Redevelopment and Manpower Development and Training programs are available in a number of schools.

The programs include the following major types:

1. Technical Institute Programs--These schools of Vocational, Technical, and Adult Education have accredited two year programs leading to the associate degree. These programs offer a broad general and technical educational background and a sound foundation of manipulative skills.

2. One and Two-Year Vocational Courses--These programs place a great emphasis upon skills training and specific jobs. They are located throughout the state in over sixty (60) centers.

3. Special Vocational Programs--These courses are provided on a part-time basis, on a full-time day class basis, or through evening classes. Such classes may provide for the related instruction for apprentices, business education, data processing, general education, homemaking, trade and industrial education, supervisory training, and clinics and seminars.

4. Special Services--These services may include the forementioned categories of counseling, guidance, placement, housing, and testing.

Vocational, Technical, and Adult Schools are located in the following Wisconsin Communities:

Antigo
Appleton
Ashland
Baraboo
Beaver Dam
Beloit
Brillion
Chippewa Falls
Cudahy
Eau Claire
Fond du Lac
Fort Atkinson
Green Bay
Hartford
Janesville
Kaukauna
Kenosha
Kimberly
La Crosse
Madison
Manitowoc
Marinette
Marshfield
Menasha
Menomonie
Merrill
Milwaukee
Monroe
Neenah
New Holstein
New Lisbon
Niagara
Oconomowoc
Oconto
Oshkosh
Portage
Port Washington
Prairie du Chien
Racine
Reedsburg
Rhinelander
Rice Lake
Richland Center
Sheboygan
Shorewood
South Milwaukee
Sparta
Stevens Point
Stoughton
Sturgeon Bay
Superior
Tomah
Tomahawk
Two Rivers
Watertown
Waukesha
Waupun
Wausau
Wauwatosa
West Allis
West Bend
Whitewater
Wisconsin Rapids

Technical Institute programs offering Two-Year Associate Degree programs are established and accredited at:

1. Appleton
2. Eau Claire
3. Green Bay
4. Kenosha
5. Madison
6. Manitowoc
7. Milwaukee
8. Oshkosh
9. Racine
10. Superior
11. Wausau

Four other schools, including those at Fond du Lac, La Crosse, Sheboygan, and Waukesha, offer one and two year programs and will soon be offering associate degrees in selected areas.

Wisconsin's vocational and technical schools are typified by the pattern of area service which prevails throughout the state. Perhaps the most recent and significant trend has been in the development and establishment of full-time post-high-school programs. The program is presently serving thousands of high school graduates and others. Administratively, and basically, the program has been established along solid, practical lines in serving the needs of the people within the state. Such a combination gives both skill and strength to the state's most basic wealth.

ASSESSMENT

Hence, the stage has been set for elaborately researching a sound structural Wisconsin program of vocational and technical education. Just what are the compositions and qualities of future needs for this program? The starting point is one of assessment, and the population consists of the schools themselves.

Procedural Patterns

Early in 1965, arrangements were made on a cooperating basis between the State Board of Vocational, Technical, and Adult Education and Stout State University to develop a program for training teachers of vocational and technical education and in establishing a basic research pattern for the state schools of vocational and technical education. Late in 1965, the Research Committee of the Directors of the Vocational, Technical, and Adult School Association suggested that an attempt be made to identify and list problems that were in need of being researched within the state schools. The Directors of the sixty-four schools were selected as recipients of an instrument which indicated these problems.

Areas For Research

Within a system of education of the size and scope of the Wisconsin vocational and technical program, there are literally hundreds of problem patterns which could be analyzed. Thus, it was necessary for arbitrary selection to be completed before the initial data collection began. For inclusion in this study, a listing of areas for research in vocational-technical education, which had been developed by the State Board of Vocational, Technical, and Adult Education was used as a starting point. From this listing, the assessment instrument was developed.

As the instrument was developed, it was decided to include items which would be of general interest to all sizes and locations of vocational and technical schools in the state. The finalized selection of categories and sub-categories is shown below:

Occupational Opportunities

I. Employment opportunities.
II. Job characteristics.

Human Resources

III. Socioeconomically handicapped youth.
IV. Motivation.
V. Geographical mobility of the worker.
VI. Adjustment to change.
VII. Career choice.
VIII. Employability.

Educational Resources

IX. Curriculum experimentation and development.
X. Instructional methodology and media.
XI. Personnel recruitment and development.
XII. Program organization and administration.
XIII. Vocational guidance and counseling.
XIV. Instructional facilities.

The purpose of the assessment was to identify those components under each of the fourteen sub-categories which was considered to be in the most critical need for research. The objective was to secure a starting point for the basic research involvement.

ANALYSIS

The fourteen sub-categories listed above were further divided according to specific components which logically fell under each of them. These logically specified components were ranked (1....n) by the population of School Directors according to these school officials' judgements. For the analysis of these rankings, two methods of illustrations were made and are included in this report.

1. Graphically charting ranks in figure form.

2. Correlation of rankings.

Both of these techniques were utilized and illustrate relationship for the data.

Graphic Illustration

Using a frequency distribution of recorded ranks as a guide, the graphic illustrations for the report were columned and projected in bar graph form for each of the sub-categories listed. For this portion of the analysis, the component first ranks in each case were used in the distribution. The graphic illustration is made for each sub-category as it is presented.

Kendall's Coefficient of Concordance, W

For determining relationships between three or more sets of ranks, Kendall has developed a technique which determines overall relationship among ratings made by respondents.[1]

In order to perform Kendall's test, the ratings (rankings) are summed according to the following chart which is given in example form:

	Ranks				Sum of		
Component	1	2	3	4	Ranks	D*	D^2
1	2	4	3	2	11	1	1
2	3	2	1	3	9	1	1
3	1	3	2	1	7	3	9
4	4	1	4	4	13	3	9
					40		20

*D values are derived by computing $(\frac{40}{4} = 10)$ with sum of rank values being subtracted.

---

[1]Cf. N. M. Downie and R. W. Heath. Basic Statistical Methods, Second Edition. (New York: Harper and Row, 1965), pp. 209-10.

To compute W, the following formula is used:

$$W = \frac{12\ D^2}{m^2(N)\ (N^2-1)}$$

$$= \frac{12\ (20)}{(16)(4)(16-1)}$$

$$= \frac{240}{960} = .25$$

The size of this coefficient (W = .25) indicates that there is low agreement among those rankings presented in the example case. High agreement would be indicated by a W = 1.00 with a low agreement by a W = 0. Using the tables of significance as a means of comparison, we find that with m = 4 and N = 4, the W = .25 value is not significant even at the 20 percent level. Hence, there is little relationship and no significance found between the rankings for these data.

Each of the fifteen sub-categories were analyzed according to the procedure outlined above. The graphical materials and data tests are shown in the following section.

Occupational Opportunities

This category was partitioned into sub-categories for 1)Employment Opportunities, and 2) Job Characteristics. Each of these sub-categories were listed and analyzed separately.

Table I
Employment Opportunities

	Ranks				Sum of		
Component*	1	2	3	4	Ranks	D	D^2
1	1	4	4	3	12	2	4
2	3	2	1	2	8	2	4
3	2	1	3	4	10	0	0
4	4	3	2	1	10	0	0
					40		8

* See Appendix for component definitions.

$$W = \frac{12 \quad D^2}{m^2 \ (N) \ (N^2-1)}$$

$$= \frac{12 \quad (8)}{16 \ (4) \ (15)} = .10$$

Interpretation--There appears to be little agreement among the rankings made by respondents for this series of components.

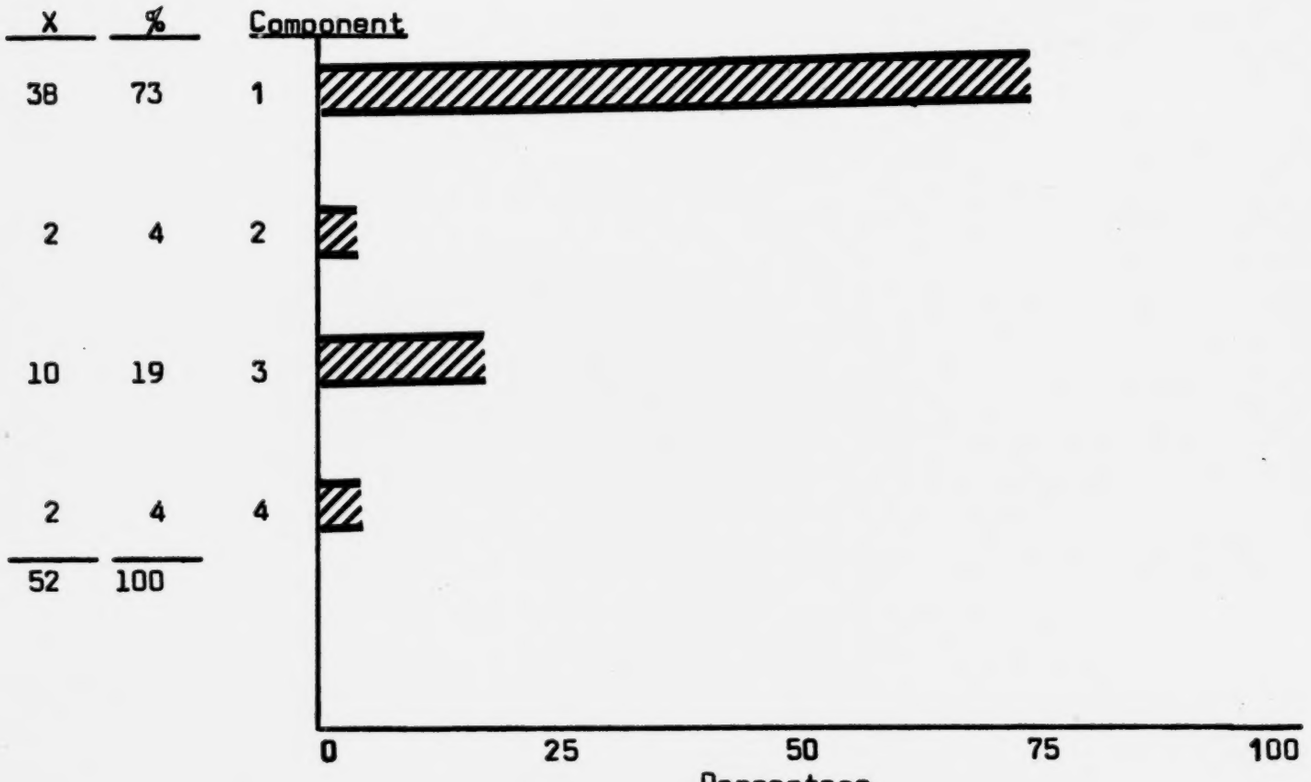

Figure 1 Employment Opportunities

Interpretation--The graph above illustrates an expressed need for research in the area of component #1. (Present and emerging occupations for which vocational and technical education programs should be available.)

Table II
Job Classifications

Component	Ranks 1	2	3	4	5	6	Sum of Ranks	D	D^2
1	1	2	3	4	6	6	22	1	1
2	5	4	1	2	1	5	18	3	9
3	6	6	6	6	2	1	27	6	36
4	2	1	4	5	5	3	20	1	1
5	4	3	2	1	4	4	18	3	9
6	3	5	5	3	3	2	21	0	0
							126		56

$W = .09$

Interpretation--There appears to be very little agreement among the rankings.

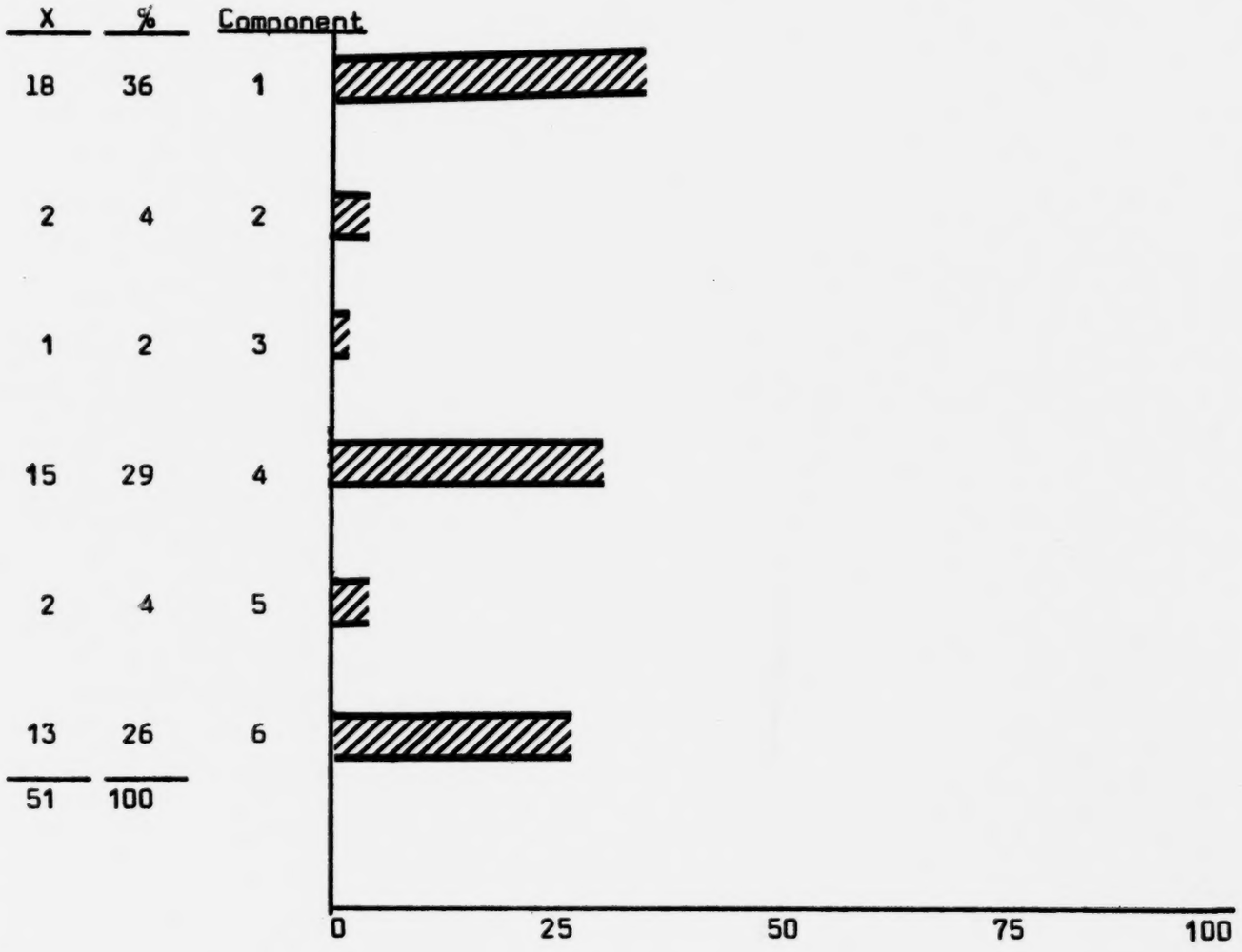

Figure 2 Job Classifications

Interpretation--The data seem to show an expressed need for research for component #1 (Competencies needed for successful entry, persistence, and advancement).

Human Resources Development

This category was divided into six (6) sub-categories and included 1) Socioeconomically handicapped youth, 2) Motivation, 3) Geographical mobility of the worker, 4) Adjustment to change, 5) Career choice, and 6) Employability. Here, as with the first category, these sub-categories are treated independently.

Table III

Socioeconomically Handicapped Youth

Component	Ranks 1	Ranks 2	Sum of Ranks	D	D^2
1	2	1	3	0	0
2	1	2	3	0	0
			6		0

W = .00

Interpretation--There is no agreement among the rankings of these data by the raters.

X	%	Component
9	18	1
42	82	2
51	100	

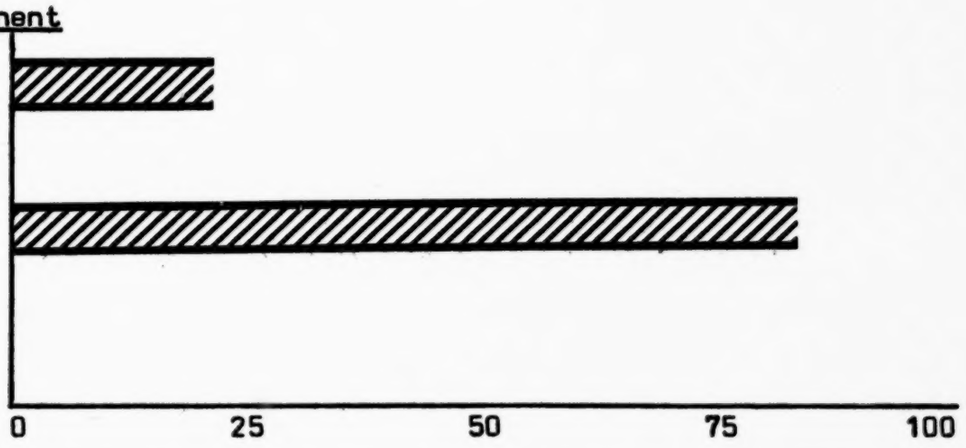

Figure 3 Socio-economically Handicapped Youth

Interpretation--For the study, there was an indicated need for research to be done for component #2 (Factor affecting motivation of socio-economically handicapped to pursue training for gainful employment and to seek employment).

Table IV

Motivation

Component	Ranks 1	2	3	4	Sum of Ranks	D	D^2
1	2	2	3	4	11	1	1
2	4	3	1	2	10	0	0
3	3	1	2	3	9	1	1
4	1	4	4	1	10	1	1
					40		2

$W = .03$

Interpretation--There is practically no agreement among these rankings.

X	%	Component
13	26	1
9	19	2
12	24	3
15	31	4
49	100	

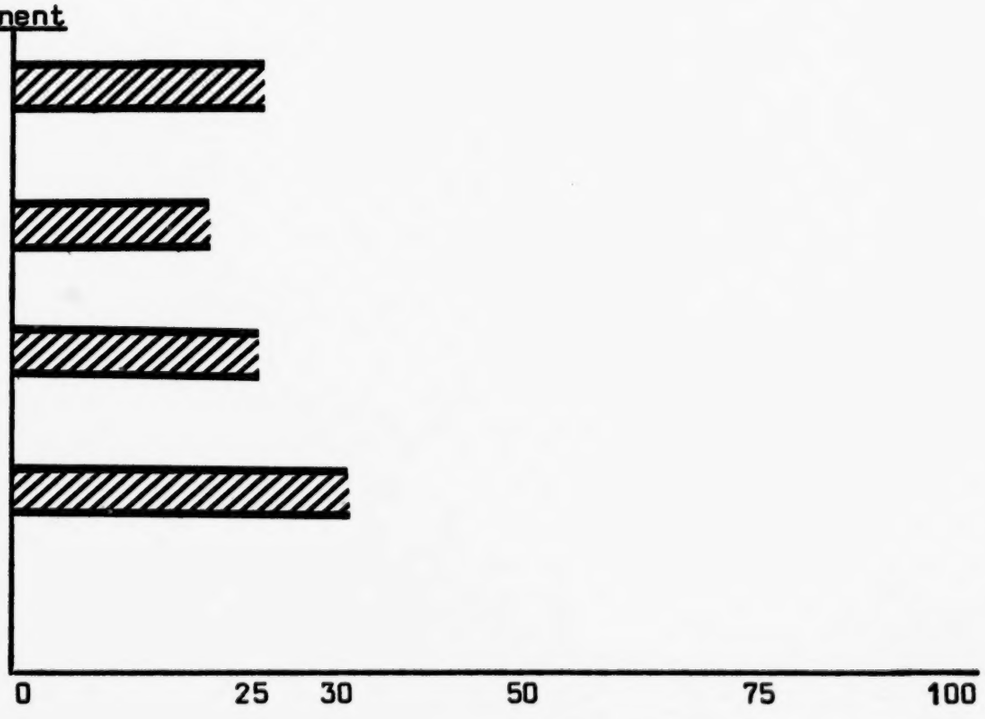

Figure 4 Motivation

Interpretation--Although there were very few differences among the four components studied, there appeared to be an indicated need for component #4 (Improvement of community attitudes toward vocational education as preparation for employment).

Table V

Geographical Mobility
of the Worker

Component	Ranks 1	2	3	Sum of Ranks	D	D^2
1	1	3	3	7	1	1
2	3	1	1	5	1	1
3	2	2	2	6	0	0
				18		2

W = .11

Interpretation--There is little agreement among the rankings among the raters for this series of components.

X	%	Component
24	48	1
11	22	2
15	30	3
50	100	

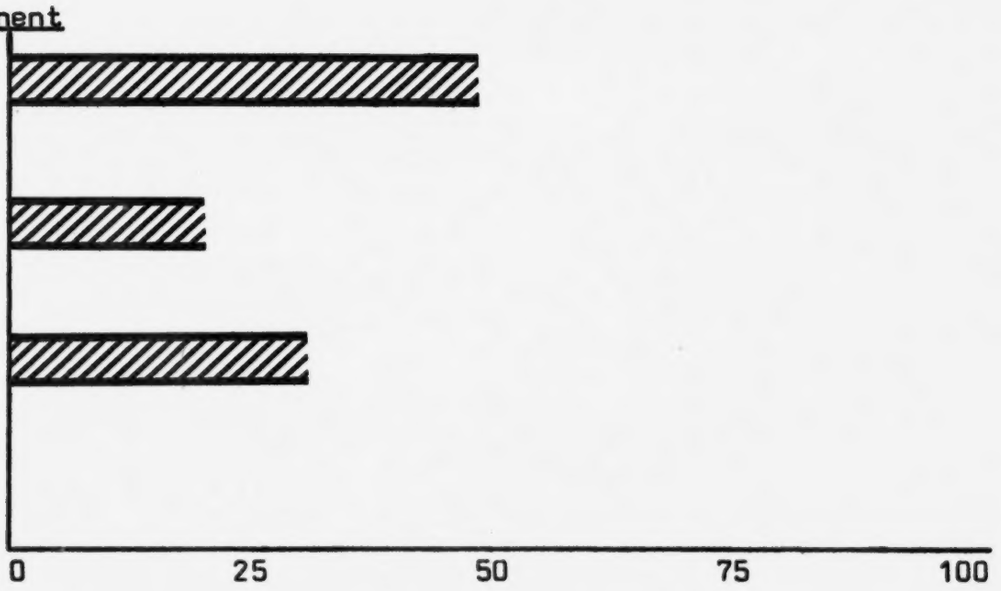

Figure 5 Geographical Mobility of the Worker

Interpretation--The graph above illustrates a need for research for component #1 (Factors which affect decisions to move and seek employment in new situations).

Table VI

Adjustment to Change

Component	Ranks 1	2	3	Sum of Ranks	D	D^2
1	1	2	3	6	0	0
2	2	1	2	5	1	1
3	3	3	1	7	1	1
				18		2

$W = .11$

Interpretation--There is little agreement among the rankings.

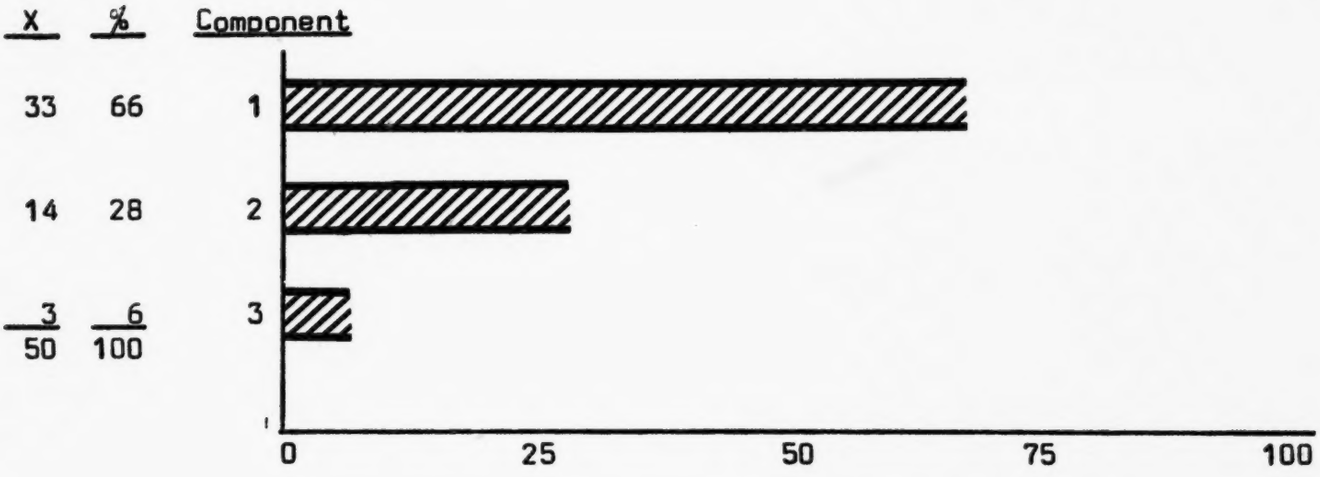

Figure 6 Adjustment to Change

Interpretation--There appears to be a need for research for component #1 (Assisting students to cope affectively with career changes throughout life) for this section.

Table VII

Career Choice

Component	Ranks 1	2	3	4	5	Sum of Ranks	D	D^2
1	5	4	1	1	3	14	1	1
2	2	2	4	4	4	16	1	1
3	3	3	2	2	2	12	3	9
4	1	1	5	5	5	17	2	4
5	4	5	3	3	1	16	1	1
						75		16

W = .06

Interpretation--There appears to be very little agreement among the rankings.

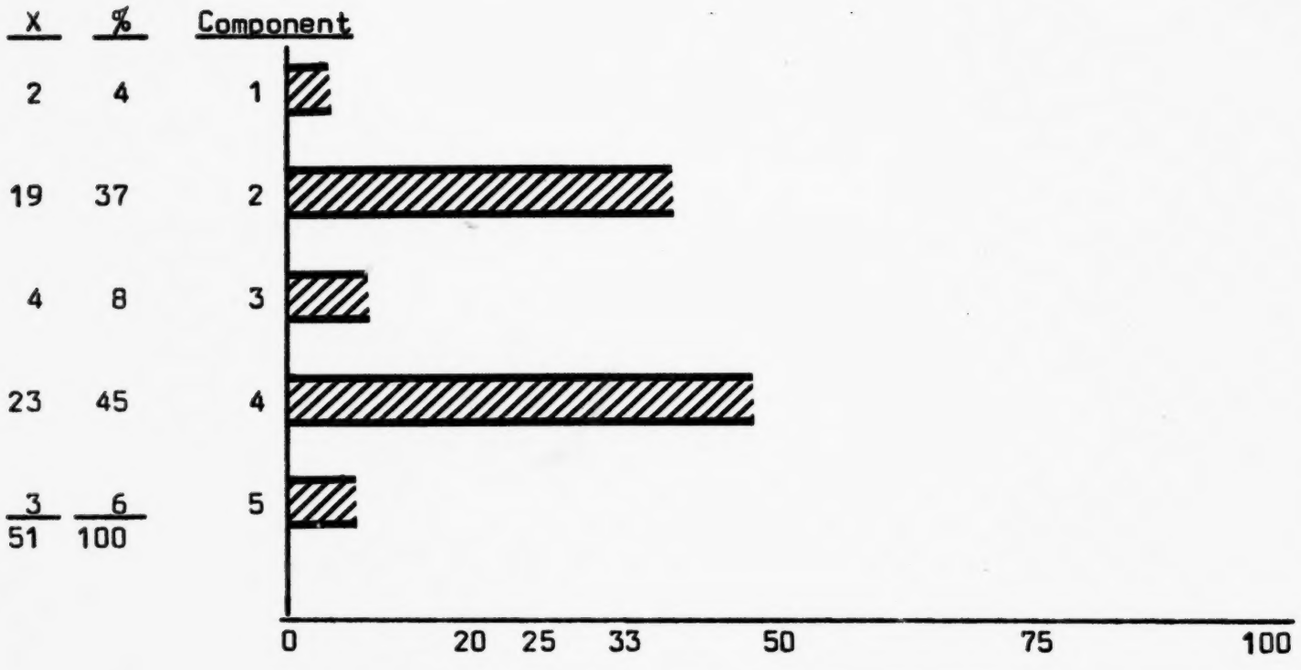

Figure 7 Career Choice

Interpretation--The two areas here which tend to be in need of researching are components #2 (Determining the potential occupational aptitudes, abilities, and persistent interests of students) and #4 (Identifying persons who can benefit from vocational education and types of training that can be most beneficial).

Table VIII

Employability

Component	Ranks 1	2	3	4	Sum of Ranks	D	D^2
1	1	2	4	4	11	1	1
2	3	1	1	3	8	2	4
3	4	4	2	1	11	1	1
4	2	3	3	2	10	0	0
					40		6

W = .08

Interpretation--There is little agreement among the rankings.

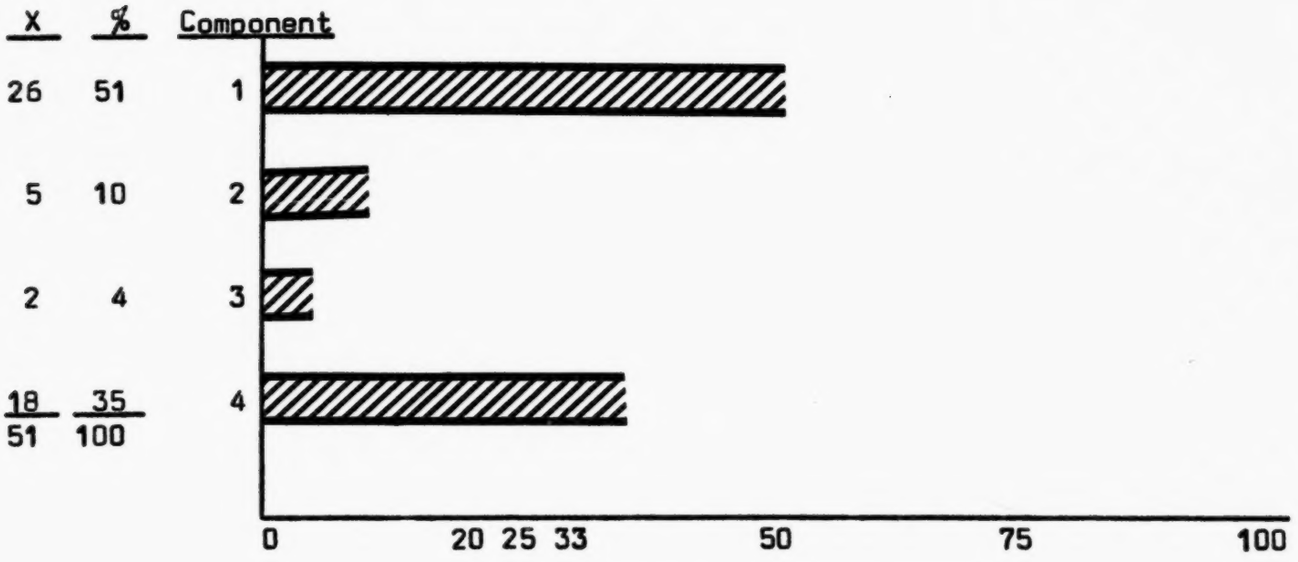

Figure 8 Employability

Interpretation--Component #1 (Basic skills which are transferable from one occupation to another or which function in clusters) was the most needed area for this group.

Educational Resources Development and Training

The last category studied was composed of six (6) sub-categories, many of which consisted of large numbers of components. The sub-categories included in this section were 1) Curriculum Experimentation and Development, 2) Instructional Methodology and media, 3) Personnel recruitment and development, 4) Program organization and administration, 5) Vocational guidance and counseling, and 6) Instructional facilities.

Table IX

Curriculum Experimentation and Development

Component	Ranks 1	2	3	4	5	Sum of Ranks	D	D^2
1	2	2	2	4	4	14	1	1
2	5	4	4	1	2	16	1	1
3	1	3	3	5	5	17	2	4
4	3	5	5	2	1	16	1	1
5	4	1	1	3	3	12	3	9
						75		16

W = .06

Interpretation--There is very little agreement among these rankings.

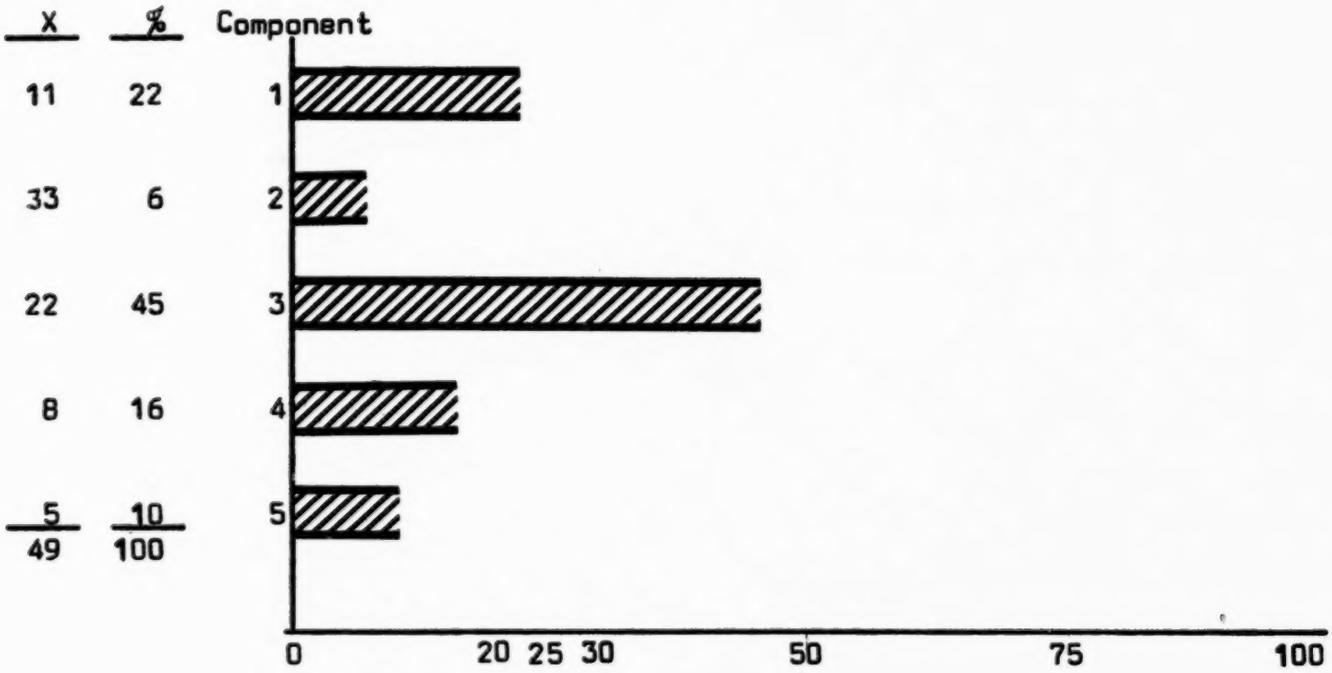

Figure 9 Experimentation and Development

Interpretation--The chart above indicated an expressed need for research in component #3 (Curricula for new and emerging occupational fields).

Table X

Instructional Methodology and Media

Component	Ranks 1	2	3	4	5	6	7	8	Sum of Ranks	D	D^2
1	7	2	7	1	4	8	6	3	38	2	4
2	2	6	2	2	6	7	5	8	38	2	4
3	3	1	3	7	3	5	7	5	34	2	4
4	5	4	4	6	8	6	2	2	37	1	1
5	4	3	5	3	1	2	8	6	32	4	16
6	6	7	1	4	2	3	3	7	33	3	9
7	8	5	8	5	5	1	1	4	37	1	1
8	1	8	6	8	7	4	4	1	39	3	9
									288		48

W = .02

Interpretation--There is very slight agreement among the rankings.

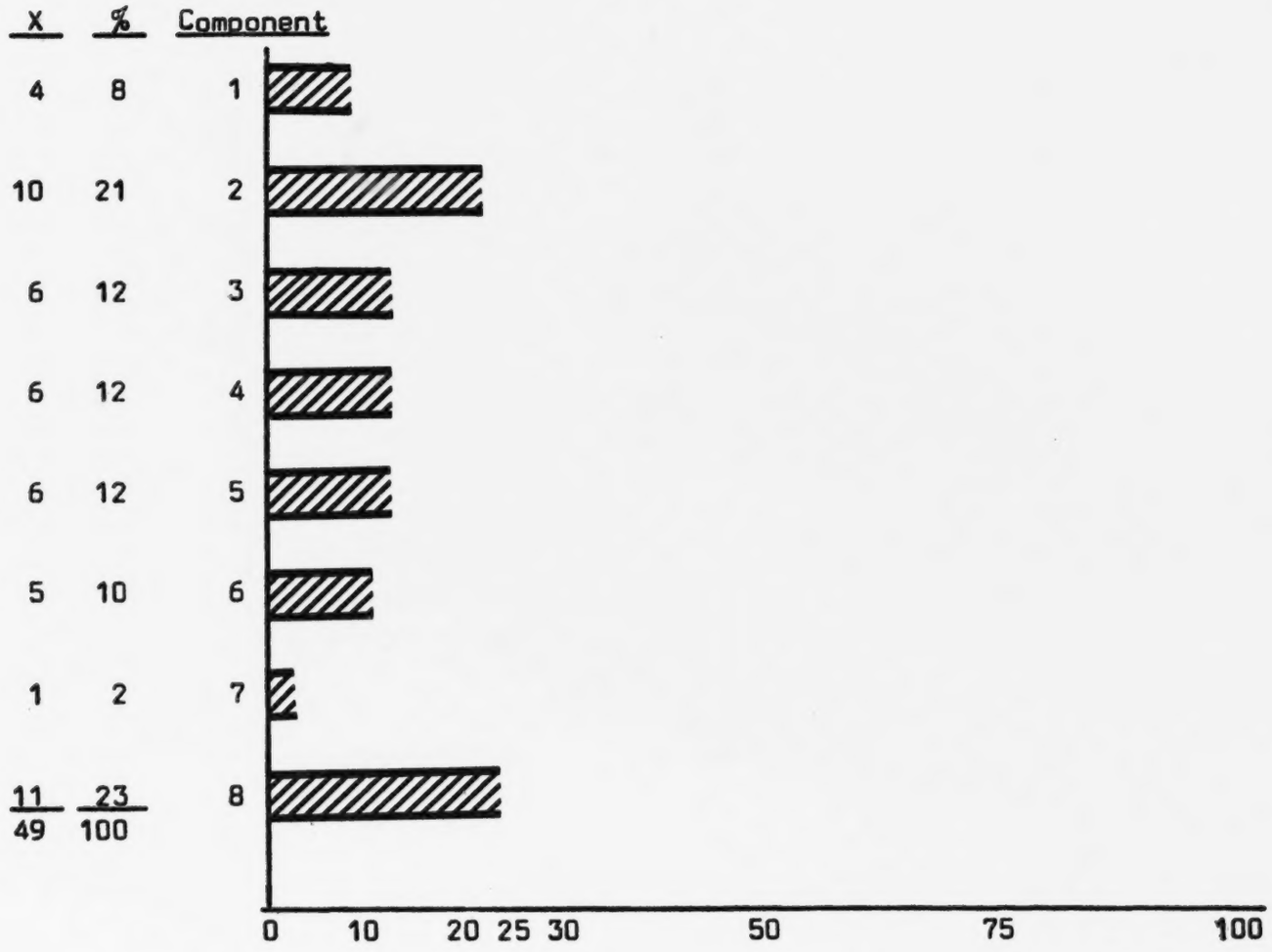

Figure 10 Instructional Methodology and Media

Interpretation--Although there appears to be no significant factor in this group which stands out, components #8 (Optimum mix of theory and practice) and #2 (Communicative effectiveness of teaching materials) have acquired the pluralities.

Table XI

Personnel Recruitment and Development

Component	Ranks 1	2	3	4	5	6	7	8	9	Sum of Ranks	D	D^2
1	1	3	3	7	7	6	9	7	5	48	3	9
2	2	7	5	3	8	7	5	3	3	43	2	4
3	3	1	7	9	9	9	8	6	2	54	9	81
4	6	4	4	2	6	8	2	8	6	46	1	1
5	7	8	1	1	1	5	6	9	8	46	1	1
6	5	2	2	5	3	2	3	4	7	33	12	144
7	9	6	9	8	5	4	1	1	4	47	2	4
8	4	5	6	4	2	1	4	5	9	40	5	25
9	8	9	8	6	4	3	7	2	1	48	3	9
										405		278

$W = .06$

Interpretation--There appears to be little agreement among these rankings.

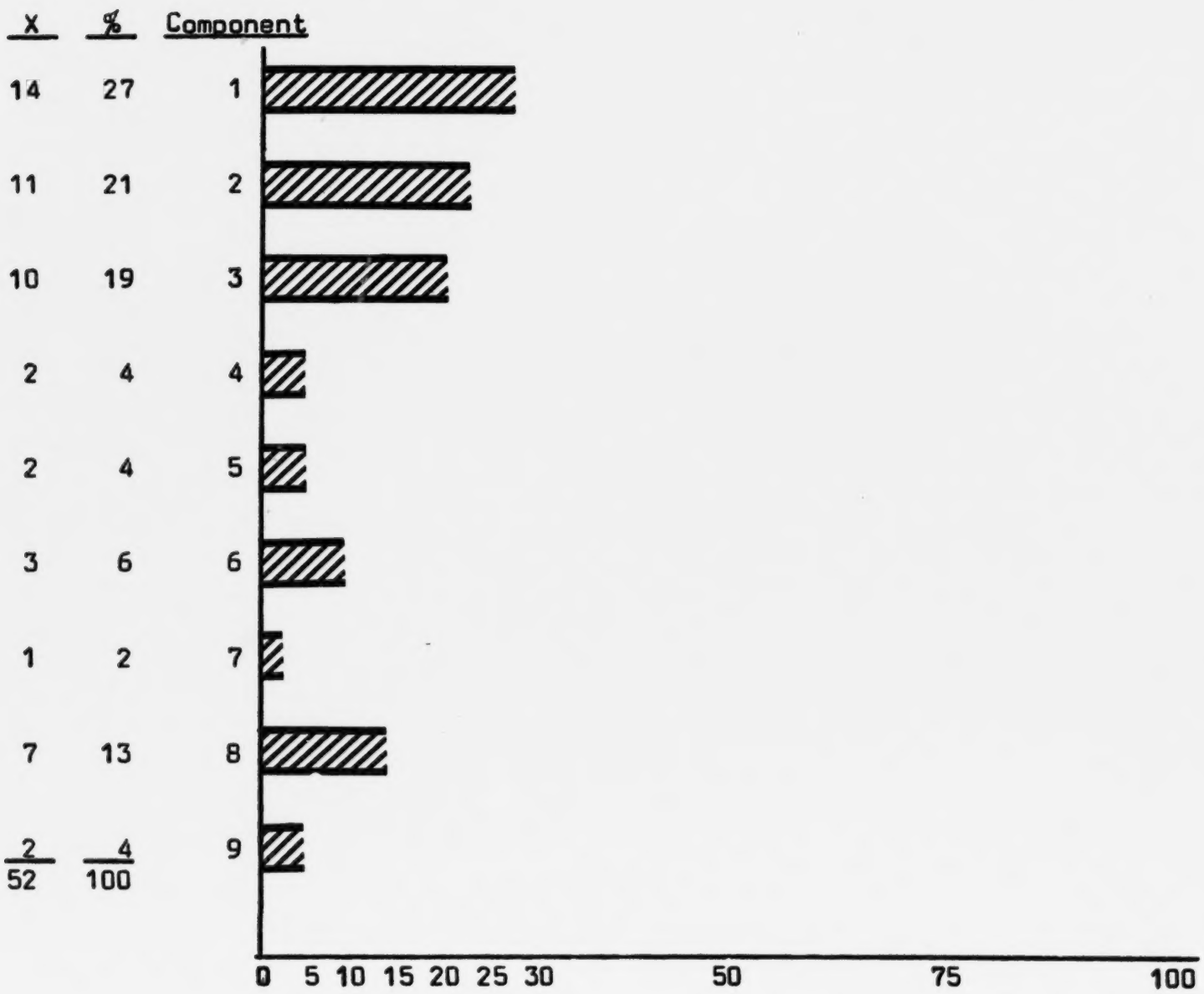

Figure 11 Personnel Recruitment and Development

Interpretation--For this many-factored area, component #1 (Sources of personnel approprate to specific staffing needs) was the most indicated need category.

Table XII

Programs Organization and Administration

Component	Ranks 1	2	3	4	5	6	7	8	9	10	11	12	Sum of Ranks	D	D^2
1	3	9	3	6	3	4	3	9	6	6	8	5	65	13	169
2	2	2	2	2	4	6	6	11	8	7	11	8	69	9	81
3	4	7	7	9	2	3	5	5	7	9	9	6	73	5	25
4	1	3	4	3	7	8	9	7	12	10	12	12	88	10	100
5	7	11	8	1	5	2	2	6	11	5	7	11	76	2	4
6	9	4	5	5	1	5	1	10	9	11	5	10	75	3	9
7	6	1	1	7	6	1	7	12	10	12	10	7	80	2	4
8	10	10	6	8	12	12	4	3	2	4	6	4	81	3	9
9	8	12	11	4	11	11	12	4	1	1	1	9	85	7	49
10	11	6	10	10	9	7	8	1	5	3	4	3	77	1	1
11	12	8	12	12	10	9	10	8	4	2	2	1	90	12	144
12	5	5	9	11	8	10	11	2	3	8	3	2	77	1	1
													936		596

W = .03

Interpretation--There is little agreement among these rankings.

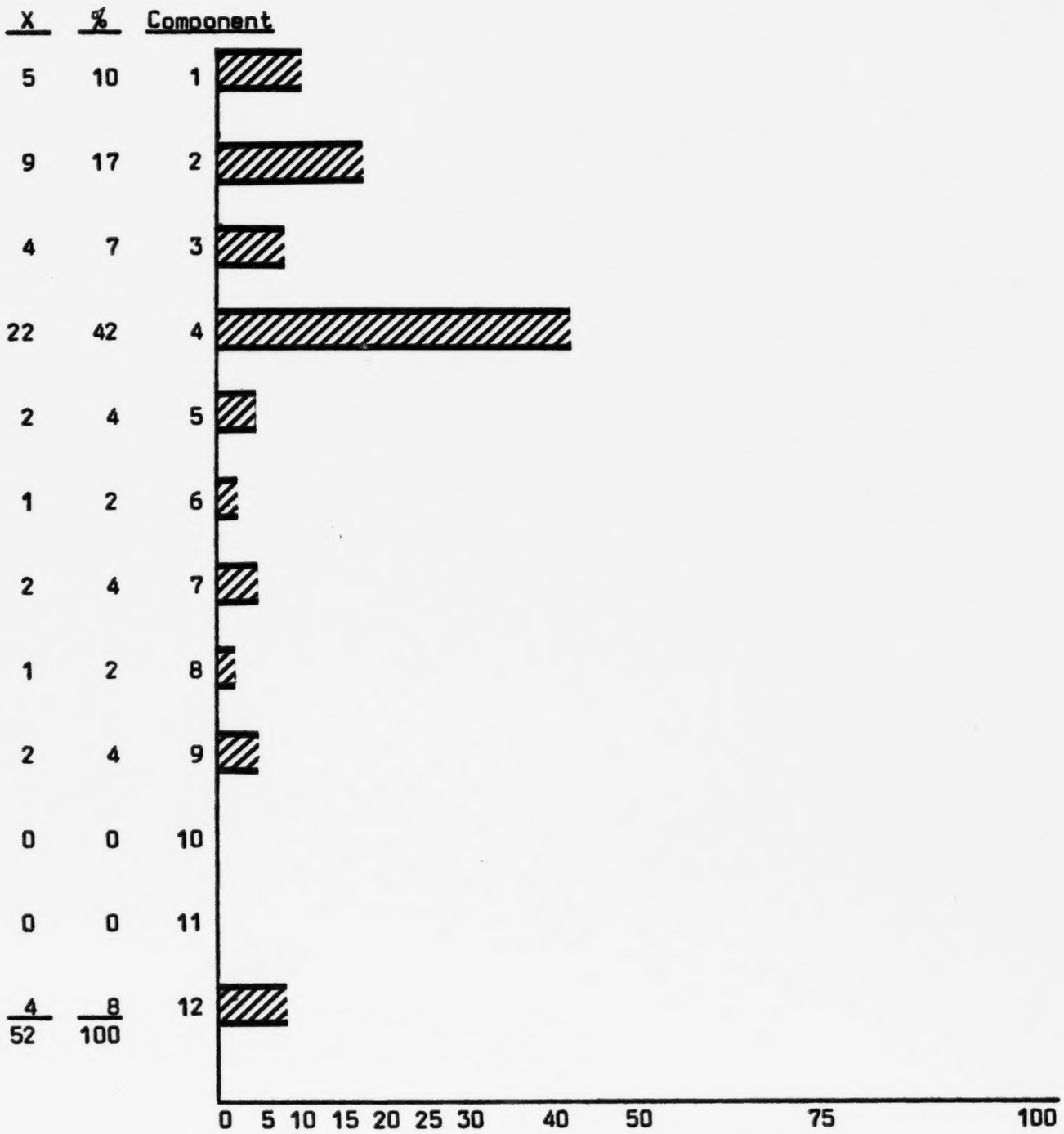

Figure 12 Program Organization and Administration

Interpretation--The factor marked most consistently as the first choice for this section was component #4 (Effective methods of organizing, administering, and supervising programs of vocational education.

Table XIII

Vocational Guidance and Counseling

Components	Ranks 1	2	3	4	5	6	7	Sum of Ranks	D	D^2
1	7	4	4	3	3	2	2	25	3	9
2	5	7	6	2	1	4	5	30	2	4
3	4	6	3	1	2	5	6	27	1	1
4	3	1	7	4	4	3	4	26	2	4
5	2	5	2	7	6	1	3	26	2	4
6	1	2	5	6	7	7	7	35	7	49
7	6	3	1	5	5	6	1	27	1	1
								196		72

W = .05

Interpretation--There is very little agreement among these rankings.

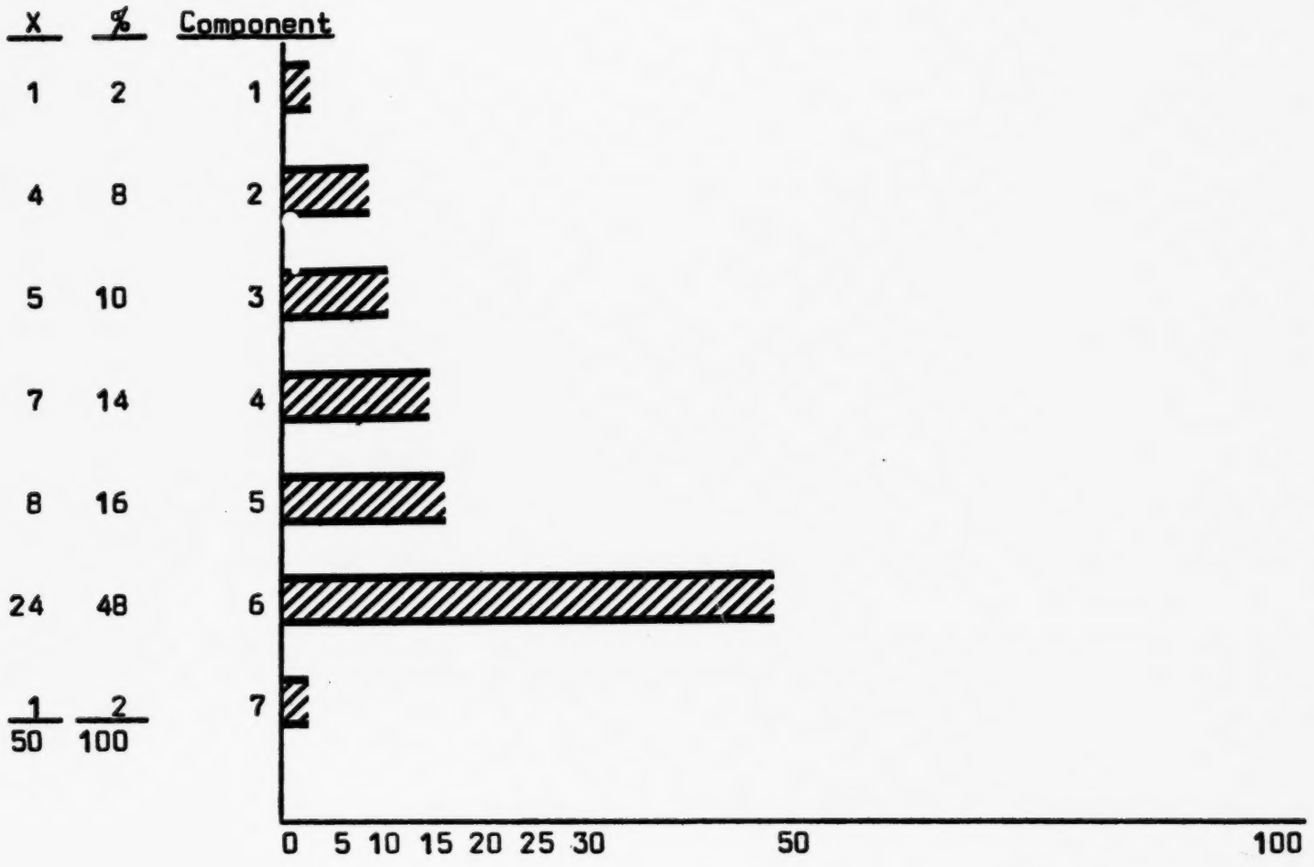

Figure 13 Vocational Guidance and Counseling

Interpretation--The graph above shows an indicated need for research for component #6 (Effective vocational guidance and counseling procedures).

Table XIV

Instructional Facilities

Component	Ranks 1	Ranks 2	Sum of Ranks	D	D^2
1	1	2	3	0	0
2	2	1	3	0	0
			6		0

W = .00

Interpretation--There is no agreement among these rankings.

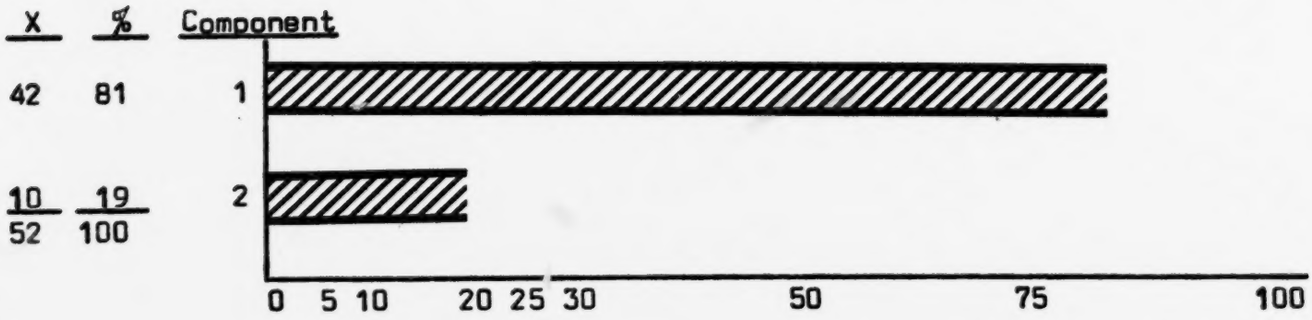

Figure 14 Instructional Facilities

Interpretation--The data for the last group indicate a need for research of component #1 (Facilities and equipment necessary to prepare persons to enter and advance in various occupations).

IMPLICATIONS

From the analysis, certain practical considerations may be drawn which are of interest to those who are involved with research in vocational and technical education in Wisconsin. Justifiably, these implications only reflect trends for the inferential group from which data were gathered and may vary widely when individual considerations are made within the population.

In all, a total of fourteen (14) major categories were inventoried for the study. The components under each of these categories which received the largest plurality of first place rankings are shown below:

1. Present and emerging occupations for which vocational and technical education programs should be available.

2. Competencies needed for successful entry, persistence and advancement.

3. Factors affecting motivation of socio-economically handicapped to pursue training for gainful employment and to seek employment.

4. Improvement of community attitudes toward vocational education as preparation for employment.

5. Factors which affect decisions to move and seek employment in new situations.

6. Assisting students to cope effectively with career changes throughout life.

7. Identifying persons who can benefit from vocational education and types of training that would be most beneficial.

8. Basic skills which are transferable from one occupation to another or which function in clusters.

9. Curricula for new and emerging occupational fields.

10. Optimum mix of theory and practice.

11. Sources of personnel appropriate to specific staffing needs.

12. Effective methods of organizing, administering, and supervising programs of vocational education.

13. Effective vocational guidance and counseling procedures.

14. Facilities and equipment necessary to prepare persons to enter and advance in various occupations.

It may be implied that these fourteen components represent the most critically needed areas for research for the schools included in the study. Thus, in the future, research efforts should be meaningfully directed toward these identified problem categories.

It would appear that state department, as well as university research projects, could facilitate and complement the direction of such efforts. Although the present research has been directed toward identification only, the future emphasis should deal with the existing underlying problems. It is suggested that Vocational, Technical and Adult School faculty who may be initiating research projects related to the completion of the graduate level degree, be made aware of these identified research problem areas. The use of emphasis of such areas is necessary if direction is to be given to problems most critically in need of being researched.

SUMMARY

There appears to be a vast difference of opinion among Directors of Schools of Vocational, Technical, and Adult Education in the State of Wisconsin with regard to the cruciality of problems within their respective institutions which are in need of research. This fact is shown quite radically for the present study as evidenced by the very low agreement among respondents for the components included in this project.

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Downie, N. M., and R. W. Heath. Basic Statistical Methods, Second Edition. New York: Harper and Row, 1965. 325 pp.

State Board of Vocational, Technical, and Adult Education. Opportunities Through Education In Wisconsin Schools of Vocational, Technical, and Adult Education. Madison: State Board Office (Mr. C. L. Greiber, Director), January, 1966.

APPENDIX

STOUT STATE UNIVERSITY
MENOMONIE, WISCONSIN
54751

OFFICE OF THE PRESIDENT

To: Directors of Vocational, Technical, and Adult Schools

From: Dr. Courtney, Stout State University

The Research Committee of your Directors Association, in its meeting of November 12, suggested that an attempt be made to identify and list problems that are in need of researching. In approaching this problem, I am asking if you will complete the attached instrument and return it to me for tabulation. We would like to have the results for presentation at the mid-winter Directors conference providing the returns come in on time.

The attached form should be completed according to the following example, using a rank order marking system for each of the ten (10) catagories on the form.

(EXAMPLE)

1. Employment Opportunities

[4] Present and emerging occupations for which vocational and technical education programs should be available.

[3] Current and projected numbers of employees in those occupations by job title and other essential strata.

[1] Estimated annual entry opportunities.

[2] Obsolence, attrition, and expansion.

Please make sure you mark every square in each category. This means that you may have up to twelve ranks (1 through 12) for some categories.

Thank you for your cooperation.

E. Wayne Courtney

Name _____

School _____

AREAS FOR RESEARCH IN VOCATIONAL-TECHNICAL EDUCATION

OCCUPATIONAL OPPORTUNITIES ASSESSMENT

I. Employment Opportunities

____ present and emerging occupations for which vocational and technical education programs should be available

____ current and projected numbers of employees in these occupations by job title and other essential strata

____ estimated annual entry opportunities

____ obsolescence, attrition and expansion

II. Job Characteristics

____ competencies needed for successful entry, persistence, and advancement

____ activities and duties of the employee

____ salary and benefits

____ prerequisites to employment--background, experience, formal education, age, licensing or certification, labor laws, union requirements.

____ continuing education or retraining needs of those employed

____ logical job clusters for training purposes

HUMAN RESOURCES DEVELOPMENT

III. Socioeconomically Handicapped Youth

____ ethnic and environmental conditions which have caused these youth to be classed as socioeconomically handicapped

____ factors affecting motivation of socioeconomically handicapped to pursue training for gainful employment and to seek employment

IV. Motivation

____ motivating the potential dropout to continue in school and achieve to his highest potential

____ effective methods of reaching and serving the dropout

____ encouraging students to aspire to prepare for levels of employment commensurate with their abilities and interests

____ improvement of community attitudes toward vocational education as preparation for employment

V. Geographical Mobility of the Worker

____ factors which affect decisions to move and seek employment in new situations

____ preparation of students for mobility

____ preparation of rural people for employment and living in urban environment

VI. Adjustment to Change

____ assisting students to cope effectively with career changes throughout life

____ psychological factors which affect flexibility in anticipating and accepting change in employment situations

____ characteristics of the <u>older worker</u> which seem to influence satisfactory adjustment to retraining and job placement

VII. Career Choice

____ nature of a career choice

____ determining the potential occupational aptitudes, abilities, and persistent interests of students (assessment, testing, guidance)

____ relationship between parental and student attitudes toward the status of different careers and the individual's career choice

____ identifying persons who can benefit from vocational education and types of training that would be most beneficial

____ unique problems of women in making career choices

VIII. Employability

____ basic skills which are transferable from one occupation to another or which function in clusters (other than technical skills)

____ psychological adjustments required of persons when they leave the protective situation offered by the training program and face the competitive working world

____ factors affecting the performance on the job when women have the dual responsibility of wage-earning and homemaking

____ extent to which vocational graduates achieve successful entry and persistence in employment

EDUCATIONAL RESOURCES DEVELOPMENT AND TRAINING

IX. Curriculum Experimentation and Development

____ core content common to various occupational categories

____ content and organizational patterns effective in preparing disadvantaged youth for successful entry and persistence in employment

____ curricula for new and emerging occuaptional fields

____ relationships between curriculum and dropout ratio

____ content and structure for various levels of instruction

X. Instructional Methodology and Media

____ relative effectiveness of various systems of supervised work experience for deffering occupations

____ communicative effectiveness of teaching materials

____ identifying and compensating for individual differences in learning situations

____ programmed instruction as an instructional media

____ influence of various instructional patterns on skill acquisition and retention

____ relationship of differing approaches, techniques, and media to behavioral and attitudinal patterns

____ procedures for evaluating student progress

____ optimum mix of theory and practice

XI. Personnel Recruitment and Development

____ sources of personnel appropriate to specific staffing needs

____ profile characteristics of successful vocational educators

____ recruitment techniques

____ core competencies basic to the various vocational education fields

____ critical competencies of successful personnel in specific responsibilities

____ effective patterns of preservice and inservice personnel development by area of responsibility

____ personnel demand estimates by area of responsibility

____ optimum occupational experience and methods of securing technical and professional preparation programs in priority areas

____ status, motivation, and adequacy of performance

XII. Program Organization and Administration

____ availability of vocational education programs

____ procedures for extending programs and establishing new programs

____ articulation of preparatory with continuing education programs

____ effective methods of organizing, administering, and supervising programs of vocational education

____ socioeconomic returns from investments in vocational education

____ liaison and cooperation with related professional disciplines and administrative units

____ involvement of appropriate representation from the world of work in program development and operation

____ level of education in which particular vocational education programs should be operative

____ appropriate role of upgraded programs, secondary schools, technical institutes, junior colleges, colleges, or universities.

____ integration of vocational and academic programs and relationship to "status"

____ success characteristics of foreign vocational programs

____ methods of forecasting local, regional, and national manpower needs and utilizing these projections in designing and operating vocational programs

XIII. Vocational Guidance and Counseling

____ educational and occupational aspirations of youth

____ nature of career patterns

____ process of occupational choice

____ achieving compatability between preparation and student potential in choice and in content selection

____ placement and follow-up of graduates

____ effective vocational guidance and counseling procedures

____ instruments, techniques, and materials

XIV. Instructional Facilities

____ facilities and equipment necessary to prepare persons to enter and advance in various occupations

____ efficient provisions and utilization of instructional facilities